



CHLAMYDIA

Chlamydia (CT), a sexually transmitted disease (STD), *Chlamydia trachomatis* is one of the most prevalent STDs in the United States. The single most important risk factor is young age. CT is transmitted most often through sexual contact with an infected person. Serious complications related to chlamydia infection include epididymitis in men and endometritis, PID, salpingitis, infertility and ectopic pregnancy in females. Perinatally, infants can develop conjunctivitis and pneumonia.

Agent: Organisms of the genus *Chlamydia trachomatis*.

Identification

Symptoms:

The majority of men and women are asymptomatic.

Symptomatic Men: Symptoms may include urethral itch, dysuria, and a mucoid-to-purulent discharge.

Symptomatic Women: Symptoms can include urinary frequency and dysuria; an increase in vaginal discharge; lower abdominal pain, intermenstrual bleeding and dyspareunia.

Rectal Chlamydia: Infections may be asymptomatic, or may resemble gonococcal proctitis with pain, bleeding and mucous discharge.

Differential Diagnosis: In men: urethritis, epididymitis, proctitis, balanitis, urinary tract infection (UTI). In females: PID, bacterial vaginosis, vaginitis, UTI, endometriosis, cervicitis.

Diagnosis:

- a) History
Signs of infection may or may not be present.
- b) Physical Examination
 1. Male patients may have mucoid or purulent urethral discharge usually without inguinal adenopathy on exam.

2. Women may have vaginal discharge, or cervicitis on exam.
3. Men/Women reporting receptive anal sex may have signs of proctitis (including discharge, tenesmus, perianal itching, rectal pain, and possibly rectal bleeding).
4. Physical exam may be normal.

c) Laboratory

1. Nucleic acid amplification testing (NAAT) should be used to diagnose chlamydia in the cervix, urethra, or rectum.
2. The best genital tests in women are provider collected cervical or patient self-collected vaginal swabs (SCVS).
3. Urine specimens should only be used for women who are not having a pelvic examination and who refuse to collect a SCVS.
4. Culture should also be performed for suspected treatment failure.

Diagnostic Criteria:

Isolation of *Chlamydia trachomatis* from sites of exposure (e.g. vagina, urethra, endocervix, and rectum) by culture or NAAT.

Incubation: *Chlamydia trachomatis* has a variable incubation period of approximately 7-21 days, but may be up to several months

Reservoir: Humans are the only natural host for *Chlamydia trachomatis*.

Source: *Chlamydia trachomatis* bacteria which comes into physical contact with the mucosal surfaces of an uninfected sexual partner.

Transmission *Chlamydia trachomatis* is easily transmitted through unprotected sexual contact with the penis, vagina, mouth, or anus of an infected partner. Ejaculation does not have to occur for chlamydia to be transmitted or acquired.



Chlamydia can also be spread perinatally from mother to baby during childbirth.

Communicability: Chlamydia is highly communicable to both males and females.

SPECIFIC TREATMENTS:

Uncomplicated Chlamydial Infections - Genital/Rectal/Pharyngeal

Recommended Regimen

Azithromycin 1 g orally in a single dose (or)

Doxycycline 100 mg orally twice a day for 7 days

Alternative Regimens

- Erythromycin base 500 mg orally four times a day for 7 days (or)
- Erythromycin ethylsuccinate 800 mg orally four times a day for 7 days
- Levofloxacin 500 mg orally once daily for 7 days
- Ofloxacin 300 mg orally twice a day for 7 days
- Doxycycline (delayed release) 200mg orally once daily for 7 days

Chlamydial Infection during Pregnancy

Uncomplicated chlamydial Infections of the urogenitalia or rectum in pregnancy should be treated.

Recommended Regimen

Azithromycin 1 g orally in a single dose

Alternative Regimens

Amoxicillin 500 mg orally, 3 times per day for 7 days

Erythromycin base 500 mg orally four times a day for 7 days

Erythromycin base 250 mg orally four times a day for 14 days

Erythromycin ethylsuccinate 800 mg orally four times a day for 7 days

Erythromycin ethylsuccinate 400 mg orally four times a day for 14 days

Neonates with Chlamydial Infections

Infant Ophthalmia Neonatorum Caused by *C. trachomatis*

Ophthalmia Neonatorum should be considered for all infants aged ≤ 30 days that have conjunctivitis, especially if the mother has a history of chlamydia infection. These infants should receive evaluation and appropriate care and treatment.

Treatment of Ophthalmia Neonatorum

Recommended Regimen

Erythromycin base or ethylsuccinate 50 mg/kg/day orally divided into 4 doses daily for 14 days

Alternative Regimen

Azithromycin suspension, 20 mg/kg/day orally, 1 dose daily for 3 days

Infant Pneumonia Caused by *C. trachomatis*

Chlamydia pneumonia in infants typically occurs at 1–3 months and is a subacute pneumonia. Characteristic signs of chlamydial pneumonia in infants include 1) a repetitive staccato cough with tachypnea and 2) hyperinflation and bilateral diffuse infiltrates on a chest radiograph. Because clinical presentations differ, all infants aged 1–3 months suspected of having pneumonia (especially those whose mothers have a history of chlamydial infection) should be tested for *C. trachomatis* and treated if infected.

Recommended Regimen

Erythromycin base or ethylsuccinate 50 mg/kg/day orally divided into 4 doses daily for 14 days

Alternative Regimen

Azithromycin 20 mg/kg/day orally, 1 dose daily for 3 days

Asymptomatic Neonates Born to Mothers Who Have Chlamydial Infection

Neonates born to mothers who have untreated chlamydia are at high risk for infection; however, prophylactic antibiotic treatment is not indicated. Infants should be monitored to



ensure appropriate treatment if symptoms develop.

Chlamydial Infections among Infants and Children

Sexual abuse must be considered a cause of chlamydial infection in infants and children. This type of case requires consultation with the DHSP Nursing Unit.

CLINICAL FOLLOW-UP OF CHLAMYDIA

A. Test-of-Cure (TOC):

1. Is not needed for persons who receive a diagnosis of uncomplicated urogenital or rectal chlamydia who are treated with any of the recommended or alternative regimens.
2. The use of chlamydial Nucleic acid amplification testing (NAAT) at <3 weeks after completion of therapy is not recommended because of the continued presence of nonviable organisms (which can lead to false-positive results). It takes at least 3 weeks for Chlamydia to clear for an accurate TOC.

B. Re-Testing:

1. Men or women who have been treated for chlamydia should be retested 3 months after treatment.
2. If re-testing at 3 months is not possible, clinicians should retest whenever the person presents for medical care within 12 months following initial treatment.
3. Pregnant women who have been treated for chlamydia should be retested 3 months after treatment.

C. Treatment Failure

1. If treatment failure is suspected (persistent symptoms in absence of re-exposure or a positive NAAT test of cure) culture should be performed.
2. Infections occurring after treatment with recommended therapy are more likely to be due to re-infection rather than treatment failure.

3. Patients should be questioned regarding the possibility of re-infection, including any new sex partners or repeated exposure to an untreated partner.

4. Treat all partners in the last 60 days.

STANDARD TESTING AND SCREENING GUIDELINES:

Females: <25 years annually, >25 years if at risk (risk defined as CT, or GC infection in past 2 years), > 1 sex partner (SP) in past 12 months, new SPs in past 3 months, contact to STDs).

MSM: At least annually. Exposed sites: genital, rectal, throat.

Hetero Males: Testing in high prevalence settings.

HIV±: At least annually, all exposed sites.

Patients on PrEP: Every 3 months.

Past CT Treatment: All patients, 3 months after initial treatment.

Immunity: Chlamydia can be acquired repeatedly with no apparent development of protective immunity.

Public Health Nursing Protocol:

Required Home visit vs. Telephone Interview may be required for cases

Refer to "Public Health Nursing STD Algorithms ([B-73 Part IV Public Health Nursing Home Visit/Telephone Protocol](#)).

REPORTING PROCEDURES

Report any case or suspected cases by CMR to DHSP within 7 days of identification. (Title 17, Section 2500. *California Code of Regulations*)

1. Report Form: STD-CMR

2. For more information on reporting-
www.publichealth.lacounty.gov/dhsp/ReportCase.htm



CONTROL OF CASE AND SEXUAL CONTACTS

Case/Index at risk for Chlamydia:

1. A person who has a diagnosis of chlamydia.
2. Sexual contact/partners to index.
3. Pregnant females diagnosed with chlamydia, or pregnant sexual contacts/partners of index case.

Management of Sex Partners/Sexual Contacts

1. Partners having sexual contact with the infected patient within 60 days preceding onset of symptoms or Chlamydia diagnosis should be referred for evaluation, testing, and presumptive treatment.
2. If the patient's last potential sexual exposure was >60 days before onset of symptoms or diagnosis, the most recent sex partner should be treated.
3. To avoid reinfection, sex partners should be instructed to abstain from unprotected sexual intercourse for 7 days after they and their sexual partner(s) have completed treatment and after resolution of symptoms, if present.

Expedited Partner Therapy (EPT)

Intended for men and women whose sexual partners have been diagnosed with Chlamydia. Medication can be delivered to the partner by the patient, a disease investigation specialist, or a collaborating pharmacy as permitted by law.

Recommended regimen:

1. EPT with Azithromycin 1 g given orally once.

Note: EPT should not be considered the first line partner management strategy in MSM with chlamydia and/or gonorrhea because of a high risk for coexisting infections (especially HIV infection)

PREVENTION EDUCATION:

Partner Services (PS)/ Targeted Case Management (TCM) (PHN/PHI)

Targeted Case management is the systematic pursuit, documentation, and analysis of medical and epidemiologic case information that focuses on opportunities for disease intervention. Partner services are a broad array of services such as partner notification, prevention counseling, STD testing and treatment and linkage to care, or other types of prevention services (e.g., reproductive health, prenatal care, substance abuse referral, etc.)

PRE-Interview Analysis

1. Establish the reason for the initial examination (RFE).
2. Establish possible history of Chlamydia Infection.
3. Establish an Interview Period (60 days preceding the onset of symptoms or diagnosis, or assessing last sexual exposure > 60 days), based on available medical or case-related information.
4. Establish information objectives (e.g., relationship to other cases).
5. Review all available medical and case information; assess missing elements in order to provide Partner Services. (i.e. inadequate/missing treatments, missing laboratory tests).
6. Review Case Number/Patient Name/Date of Interview/Diagnosis, etc.
7. Review interview record.
8. Review laboratory results/medical reports.
9. Review a copy of the infected patient's Field Record (FR)/Health Department Follow-Up (HDFU), if applicable/all associated field records (partners, suspects, and associates).
10. Initiate case documents/field notes in a logical sequence.

PHN/PHI will Conduct Index or Contact Interviews:

The PHN/ PHI conducts these interviews preferably in person and always in confidence. Telephone interviews are permissible per approved algorithms.



Child Abuse/Child Neglect-Mandated Reporting

Sexual abuse and child neglect reporting are required by California law. PHNs/PHIs are mandated reporters. This includes the reporting of sexual partners of disparate age and is required regardless of disease intervention priorities. California Penal Code §§11165.7, 11166, and 11167.

PHN/PHI initiates interview:

The primary objective of the interview is to help the client manage their infection. The PHN/PHI ensures that each client is educated in regards to chlamydia. The following topics shall be discussed with patient:

Interview Process:

1. Introduce her/himself, explain his/her professional role and the purpose of the session.
2. Maintain confidentiality, in the context of (PS). Confidentiality refers to keeping information about index, partners, or contacts in confidence.
3. Manage risk through prevention counseling.
4. Ensure patient understands mode of transmission, symptomatic/asymptomatic nature of disease/risk of re-infection, complications and consequences.
5. Assess patient's self-perception of risk, higher chance of getting/giving other STDs/HIV, and the importance of referral of sex partners and other high-risk persons (i.e. pregnant partners) for treatment to protect their health and reduce the spread of disease.
6. If applicable, assess patient's understanding of negative consequences to fetus if she delivers while being infected with Chlamydia.
7. Link patient to medical evaluation and treatment, plan counseling/testing or referral for other STDs (i.e., Gonorrhea, Syphilis, HCV), HIV medical care if HIV positive, and HIV prevention services (including PrEP/PEP) as applicable.

8. Plan to follow-up regarding any pending referral/treatment plans.

Partner Elicitation/Field Records (FR)

1. Initiate a Field Record for all interview period partners that have adequate locating information. The Interview Period is the time from the earliest date the patient could have been infected to the date of treatment.
2. Initiate a Field Record for other high-risk individuals such as non-sex partners who are symptomatic or someone who is part of index's sexual network (if applicable).

DOCUMENTATION

The PHN/ PHI documents the results of interviews, referral forms, laboratory studies in STD Case watch.

Ensure CW Referral Forms Include the following:

1. Client's understanding of reason for the initial examination (RFE),
2. Established possible history of Chlamydia infection.
3. Medical and case information in such a manner as to establish the reason for the initial examination.
4. An interview period based on available medical or case-related information. An Interview Period is (60 days preceding the onset of symptoms or diagnosis, or assessing last sexual exposure > 60 days).
5. Case Number/Patient Name/Date of Interview/Diagnosis.
6. Complete interview record.
7. Chlamydia treatment/ preventive treatments.
8. Laboratory results & follow up testing/medical reports.
9. Infected patient's FR/HDFU, if applicable/all associated field records (partners, suspects, and associates).
10. Case documents/field notes in a logical sequence.

QUALITY ASSURANCE & CLOSURE REVIEW (LEVEL I and LEVEL II)

Cases are to be closed within 30 days from assignment to PHN/PHI with all associated/



required case management forms. Documents must be legible, thorough, and written in a concise manner. Closure may be extended by supervisor if needed. Cases not meeting closure criteria will be re-routed for further investigation.

OTHER RESOURCES:

- 1) Addendum: DHSP STD Clinic Manual Sections/Chlamydia Rev Nov. 2016
- 2) CDC Recommendations for partner services programs for HIV infection, syphilis, gonorrhea, and chlamydial infection. MMWR Recomm Rep 2008; 57(No. RR-9).
- 3) CDC. Sexually Transmitted Diseases Treatment Guidelines, MMWR Recommendations and Reports 2015; 64
- 4) Syphilis and STD resources at www.publichealth.lacounty.gov/dhsp/InfoForProviders.htm